

5083252



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**D6104-003**  
**Job Sheet 179252**



Part No: D6104-003

Job Qty: 12 ea

Part Name: Round Billet, 17-4



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 6/15/18

Job Tracking No:

Due Date: 6/29/18

Created By: Chantal Lavoie

Type: Stock

Description:

Note: DWG REV B

Ship Via:

### Bill of Materials

### Job Routing

| Op No | Operation  | Qty    | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off       |
|-------|------------|--------|------------|----------|-----------|---------|-----------------------|-----------|----------------|
|       |            |        |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time |                |
| 100   | Purchasing | 12 pcs |            | 6/29/18  | 0.00      | 0.00    | Purchasing            |           | AT 18/06/22    |
| 110   | Packaging  | 12 pcs |            | 6/29/18  | 0.00      | 0.00    | Packaging2            |           | AT 18/06/22    |
| 120   | QC         | 12 pcs |            | 6/29/18  | 0.00      | 0.00    | QC6                   |           | 18-06-26       |
| 130   | Packaging  | 12 pcs |            | 6/29/18  | 0.00      | 0.00    | Packaging3-2          |           | 2018/06/28     |
| 140   | QC21-SA    | 12 Ea  |            | 6/29/18  | 0.00      | 0.00    | QC21                  |           | 21 JUN 28 2018 |

Part Op 100 - Issue P/O: 40217 a)Description: S.S round billet b) Ø3.25" x 3.80" long d) Material: 17-4PH Stainless  
 Descriptions: steel (Ams 5643 or Aisi 630) e)One blank makes 2 parts  
 110 - Ensure material certification is attached  
 120 - Ensure Material certification comply to Dwg D6104  
 130 - LOCATION: MAT043

DAS  
13  
9-80

JUN 15 2018

### Job BOM

| Part / Item | Component Name           | Quantity      | Operation      | Container |
|-------------|--------------------------|---------------|----------------|-----------|
| D6104-003P  | 17-4 SS Roundbar 3.25"Od | 12 pcs (1 ea) | 100-Purchasing | 5083219   |

### Job Allocations

| Operation      | Component Part | Required | Inventory | Allocated |
|----------------|----------------|----------|-----------|-----------|
| 100-Purchasing | D6104-003P     | 12       | 0         | 0         |

### Part Specifications

Specifications could not be found.

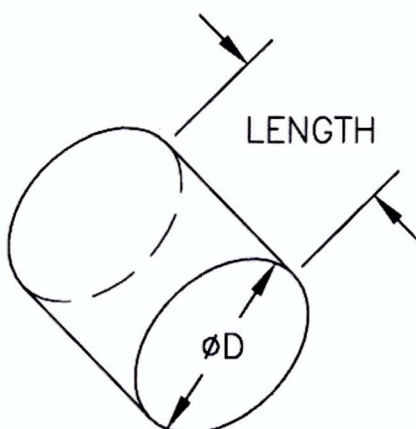
Plex 6/15/18 9:24 AM dart.lavoie.chantal



|                               |                                |                                                                        |                        |
|-------------------------------|--------------------------------|------------------------------------------------------------------------|------------------------|
| DESIGN<br><i>RT</i>           | DRAWN BY<br><i>[Signature]</i> | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA               |                        |
| CHECKED<br><i>[Signature]</i> | APPROVED<br><i>[Signature]</i> | DRAWING NO.<br>D6104                                                   | Rev. B<br>SHEET 1 OF 1 |
| DATE<br>02.11.25              |                                | TITLE<br>ROUND BILLET, 17-4                                            | SCALE<br>NTS           |
| A                             | 01.04.10                       | NEW ISSUE                                                              |                        |
| B                             | 02.11.25                       | CLARIFY ALLOY SPEC<br>ADDED D6104-009/-011<br>REDUCE LENGTH OF BILLETS |                        |

RELEASED  
02.11.29 *[Signature]*

## SPECIFICATION CONTROL DRAWING



MATERIAL: 17-4 PH SS (AMS 5643) OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

| Part No.  | Alloy                   | D<br>(Diameter) | Length |
|-----------|-------------------------|-----------------|--------|
| D6104-001 | 17-4 PH STAINLESS STEEL | Ø3.00           | 3.80   |
| D6104-003 | 17-4 PH STAINLESS STEEL | Ø3.25           | 3.80   |
| D6104-005 | 17-4 PH STAINLESS STEEL | Ø4.00           | 5.10   |
| D6104-007 | 17-4 PH STAINLESS STEEL | Ø4.50           | 5.10   |
| D6104-009 | 17-4 PH STAINLESS STEEL | Ø5.25           | 4.10   |
| D6104-011 | 17-4 PH STAINLESS STEEL | Ø6.50           | 4.10   |
|           |                         |                 |        |
|           |                         |                 |        |

Copyright © 2001 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.





Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER PO040217

**Supplier:** MEC002-VU  
Metaux Castle  
P.O. Box 4090 Stn A  
Toronto  
ON  
M5W OE9 Canada

**PO No:** PO040217

**PO Date:** 6/15/18

**Due Date:** 6/29/18

**Purchase Order**

**Revision:**

**Revision Date:**

**Ship-To Contact:** Lavoie, Chantal  
Phone: clavoie@dartaero.com

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**Via:** Ground

**Pymt Terms:** Net 30

**Freight Terms:**

**Special Comments:**

**E-MAILED**  
JUN 15 2018

## Items

| Line Item           | Job    | Part       | Supplier Part No | Description              | Status | Due Date | Order Quantity | Received Quantity | Balance | Unit Price (USD)  | Extended Price |
|---------------------|--------|------------|------------------|--------------------------|--------|----------|----------------|-------------------|---------|-------------------|----------------|
| 1                   | 179252 | D6104-003P |                  | 17-4 SS Roundbar 3.25"Od | Firmed | 6/29/18  | 12 pcs         | 0 pcs             | 12 pcs  | \$26.70/pcs       | \$320.40       |
| 2                   | 179253 | D6104-007P |                  | 17-4 SS Roundbar 4.50"Od | Firmed | 6/29/18  | 12 pcs         | 0 pcs             | 12 pcs  | \$68.53/pcs       | \$822.36       |
| 3                   | 179254 | D6104-009P |                  | 17-4 SS Roundbar 5.25"Od | Firmed | 6/29/18  | 12 pcs         | 0 pcs             | 12 pcs  | \$111.7167/pcs    | \$1,340.60     |
| 4                   | 179256 | D6104-011P |                  | 17-4 SS Roundbar 6.50"OD | Firmed | 6/29/18  | 12 pcs         | 0 pcs             | 12 pcs  | \$128.20/pcs      | \$1,538.40     |
| <b>Grand Total:</b> |        |            |                  |                          |        |          |                |                   |         | <b>\$4,021.76</b> |                |

## Order Notes

### Procurement Quality Clauses

A005 right of entry  
A012 chemical and physical test report  
A016 personnel qualification  
A017 raw material identification (as applicable)  
A026 certification of material conformance  
A041 quality management system  
A042 dart notification by supplier  
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

Plex 6/15/18 1:08 PM dart.lavoie.chantal

**Castle Metals®**

A. M. Castle &amp; Co.

PACKING SLIP/  
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3627835

|                                                                               |               |                                                                     |  |                                                                      |  |                                                                        |  |
|-------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|--|----------------------------------------------------------------------|--|------------------------------------------------------------------------|--|
| <b>Ship From:</b>                                                             |               | <b>Sold To:</b>                                                     |  | <b>Ship To:</b>                                                      |  | <b>Deliver To:</b>                                                     |  |
| A. M. CASTLE & CO.<br>2150 ARGENTIA ROAD<br>MISSISSAUGA, ON L5N<br>2K7<br>CAN |               | DART AEROSPACE LTD<br>1270 ABERDEEN<br>HAWKESBURY, ON K6A 1K7<br>CA |  | DART AEROSPACE LTD<br>1270 ABERDEEN<br>HAWKESBURY, ON<br>K6A 1K7 CAN |  | DART AEROSPACE LTD<br>1270 ABERDEEN<br>HAWKESBURY, ON<br>K6A 1K7<br>CA |  |
| <b>Date Shipped</b>                                                           | <b>F.O.B.</b> | <b>Freight Terms</b>                                                |  | <b>Carrier</b>                                                       |  | <b>BOL No</b>                                                          |  |
| 20-JUN-18                                                                     | ORIGIN        | Prepaid                                                             |  | MANITOULIN                                                           |  | 3627835-2                                                              |  |

|                         |                                       |
|-------------------------|---------------------------------------|
| <b>Shipment Details</b> | <b>Final Destination Branch - TOR</b> |
|-------------------------|---------------------------------------|

|                   |                                |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                       |             |            |             |                  |
|-------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|-------------|------------------|
| Order No          | Line No                        | Item No                                                                                                                                                                                                                                                  | Description                                                                                                                                                                                                                                                                                                                                           |             |            |             |                  |
| 5175328           | 1                              | 42470.MO                                                                                                                                                                                                                                                 | 3.2500.RD.17CR-4NI.STAINLESS.RT.SOL TR.COND<br>A.132.0000-156.0000<br>CUT TO 3.8 IN ( + .1250/- .0000 IN) - BAND SAW CUTTING<br>SPECIFICATIONS: AMS 5643<br>ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST<br>RECEIVE AT TIME OF DELIVERY<br>ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S<br>Email P/s and certs to: clavoie@dartaero.com |             |            |             |                  |
| Purchase Order No |                                | Part Number                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                       | Ordered Qty |            | Invoice Qty |                  |
| 40217             |                                | YOUR ITEM NUMBER:<br>D6104-003                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                       | 12.00 PCS   |            | 12.00 PCS   |                  |
| Details           |                                | ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY<br>ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S<br>Email P/s and certs to: clavoie@dartaero.com<br>END USER: DART AEROSPACE<br>END USE: COMMERCIAL AIRCRAFT PARTS |                                                                                                                                                                                                                                                                                                                                                       |             |            |             |                  |
| Delivery No.      | Mill/Source                    | Heat Number                                                                                                                                                                                                                                              | Mech Id                                                                                                                                                                                                                                                                                                                                               | PCS         | Width (IN) | Length (IN) | Shipped Qty(LBS) |
| 121906265         | NORTH<br>AMERICAN<br>STAINLESS |                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                       | 12          |            |             | 107.1993         |

26646404



**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/  
CERTIFICATE OF CONFORMANCE

Page 2 of 2

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:



Date:

Name

**SUE KALOUS**

**JUN 20 2018**





North American Stainless Canada Inc.  
740 Imperial Road North  
Guelph, ON N1K1Z3  
Canada

# METALLURGICAL TEST REPORT

6870 Highway 42 East  
Ghent, KY 41045-9615  
(502) 347-6000

Certificate: 390501 1 Mail To:  
CASTLE METALS  
Customer: 007209 001 2150 ARGENTIA ROAD  
MISSISSAUGA, ON L5N 2K7

Ship To:  
CASTLE METALS  
2150 ARGENTIA ROAD  
MISSISSAUGA, ON L5N 2K7

Date: 3/12/2018 Page: 1

Steel: 630 (17-4)

Finish: HR

Your Order: 39647

NAS Order: PN 0089540 01

Heat Treat Code: 45,735

Corrosion:

Red Ratio: 7.0 :1

## PRODUCT DESCRIPTION:

Round Bar, Hot Rolled, Annealed, Rough Turned  
UNS S17400; EN 10204 3.1, ASTM A484/16, MACRO OK, AMS 5643U  
ASTM A564/13, AMS 2303F, ASME SA564-07, ASTM F899/125  
SOL. ANNEALED @ 1900F MIN FOR 1 HR MIN. and air cooled to RT  
UT per API6A PSL3, ASTM A388-S1 criteria, UT passed  
H900 MECH. PROPERTIES ARE CAPABILITY ONLY\*

## REMARKS:

COMPLIES W/REQUIREMENTS OF DFAR 252.225-7009 EU DIRECTIVE  
2011/65/EU. ROHS. EAF+AOD+CC. NO WELD REPAIR. MELTED AND MFG  
IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION



| Product Id | Skid # | Diameter | Size | Weight | -----Length----- | Mark | Pieces | Commodity Code |
|------------|--------|----------|------|--------|------------------|------|--------|----------------|
| BJ3371 9   |        | 3.2500   |      | 694    | 144.00           | 2    | 1      |                |

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323

CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan) Chemical Analysis per ASTM A751/14a

| NAS Heat | CM   | C %   | CB % | CO %  | CR %  | CU % | MN % | MO % | N %  | NI % |
|----------|------|-------|------|-------|-------|------|------|------|------|------|
| 707N     | US   | .020  | .199 | .02   | 15.58 | 3.36 | .78  | .024 | .029 | 4.32 |
|          |      |       |      |       |       |      |      |      |      |      |
|          | P %  | S %   | SI % | TA %  | TI %  |      |      |      |      |      |
|          | .018 | .0225 | .68  | .0125 | .0030 |      |      |      |      |      |

## MECHANICAL PROPERTIES

| Product Id | 1 d<br>o i<br>c r | HB<br>No. | Grain<br>No. | Ferrite<br>% | TS-900CAP<br>KSI | YS-900CAP<br>KSI | El-900CAP<br>% 4D | RA-900CAP<br>% | RC-900CAP<br>No. | FREQ.<br>No. |
|------------|-------------------|-----------|--------------|--------------|------------------|------------------|-------------------|----------------|------------------|--------------|
| BJ3371 9   | R L               | 341.0     | 7.0          | .24          | 202.44           | 180.15           | 14.18             | 45.82          | 42.5             | .39          |

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical  
Dept. Mgr.

KRIS LARK

3/12/2018



North American Stainless Canada Inc.  
740 Imperial Road North  
Guelph, ON N1K1Z3  
Canada

## METALLURGICAL TEST REPORT

6870 Highway 42 East  
Ghent, KY 41045-9615  
(502) 347-6000

Certificate: 390501 1 Mail To:  
Customer: 007209 001 CASTLE METALS  
2150 ARGENTIA ROAD  
MISSISSAUGA, ON L5N 2K7

Ship To:  
CASTLE METALS  
2150 ARGENTIA ROAD  
MISSISSAUGA, ON L5N 2K7

Date: 3/12/2018 Page: 2

Steel: 630(17-4)

Finish: HR

Corrosion:

Red Ratio: 7.0 :1

Your Order: 39647

NAS Order: PN 0089540 01

Heat Treat Code: 45,735

### PRODUCT DESCRIPTION:

Round Bar, Hot Rolled, Annealed, Rough Turned  
UNS S17400; EN 10204 3.1, ASTM A484/16, MACRO OK, AMS 5643U  
ASTM A564/13, AMS 2303F, ASME SA564-07, ASTM F899/12b  
SOL. ANNEALED @ 1900F MIN FOR 1 HR MIN. and air cooled to RT  
UT per API6A PSL3, ASTM A388-S1 criteria, UT passed  
H900 MECH. PROPERTIES ARE CAPABILITY ONLY\*

### REMARKS:

COMPLIES W/REQUIREMENTS OF DFAR 252.225-7009 EU DIRECTIVE  
2011/65/EU. RoHS. EAF+AOD+CC. NO WELD REPAIR. MELTED AND MFG  
IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION



| Product Id | Skid # | Diameter | Size | Weight | -----Length----- | Mark | Pieces | Commodity Code |
|------------|--------|----------|------|--------|------------------|------|--------|----------------|
| BJ3371 9   |        | 3.2500   |      | 694    | 144.00           | 2    | 1      |                |

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323

CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan) Chemical Analysis per ASTM A751/14a

| NAS Heat | CM |
|----------|----|
| 707N     | US |
|          |    |
|          |    |

### MECHANICAL PROPERTIES

| Product Id | l d<br>o i<br>c r | SEV.<br>No. |
|------------|-------------------|-------------|
| BJ3371 9   | R L               | .22         |

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical  
Dept. Mgr.

KRIS LARK

3/12/2018



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: D6104-003  
 DATE: 18/06/21

PO / BATCH NO.: P0040217/5083252

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 12x  
 QUANTITY INSPECTED: 12x  
 QUANTITY REJECTED: —

THICKNESS ORDERED: 3.80 3.25"  
 THICKNESS RECEIVED: 3.25"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

| DESCRIPTION                                        | NCR<br>(Check<br>Y/N) |            | COMMENTS        |
|----------------------------------------------------|-----------------------|------------|-----------------|
| SURFACE DAMAGE                                     | Y                     | <u>(N)</u> |                 |
| CORRECT FINISH                                     | <u>(Y)</u>            | N          |                 |
| CORROSION                                          | Y                     | <u>(N)</u> |                 |
| CORRECT GRAIN DIRECTION                            | <u>(Y)</u>            | N          |                 |
| CORRECT MATERIAL PER M-DRAWING                     | <u>(Y)</u>            | N          | <u>AMS 5643</u> |
| CORRECT THICKNESS                                  | <u>(Y)</u>            | N          |                 |
| PHOTO REQUIRED                                     | Y                     | <u>(N)</u> |                 |
| CORRECT REF # TO LINK CERT                         | <u>(Y)</u>            | N          | <u>HT: 707N</u> |
| CORRECT MATERIAL IDENTIFICATION                    | <u>(Y)</u>            | N          |                 |
| CORRECT M# ON THE MATERIAL                         | <u>(Y)</u>            | N          |                 |
| DOES THIS MATERIAL REQUIRE<br>ENGINEERING SIGN OFF | Y                     | <u>(N)</u> |                 |
| DOES THIS REQUIRE AN<br>EXTRUSION REPORT           | Y                     | <u>(N)</u> |                 |

| CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.<br>RECORD RESULTS BELOW |     |     |       |       |         |
|------------------------------------------------------------------------------------|-----|-----|-------|-------|---------|
|                                                                                    | HRC | HRB | DUR A | DUR D | WEBSTER |
| TYPE OF MATERIAL                                                                   |     |     |       |       |         |
| SIZE OF TEST SAMPLE                                                                |     |     |       |       |         |
| HARDNESS / DUROMETER READING                                                       |     |     |       |       |         |

testers located in the Quality Office

| QC 18 INSPECTION                                                                                                          | ENGINEERING SIGNOFF (if required)   |
|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| INSPECTED BY: <u>AT</u> <span style="float: right; text-align: right;">DAS<br/>8<br/>9-89</span><br>DATE: <u>18/06/21</u> | SIGNED OFF BY: _____<br>DATE: _____ |

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in